1. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 - 2x - 15$$

A. $a \in [1.7, 5.4]$, $b \in [-6, 1]$, $c \in [8, 10]$, and $d \in [2, 4]$

B. $a \in [3.3, 7.2]$, $b \in [-6, 1]$, $c \in [3, 6]$, and $d \in [2, 4]$

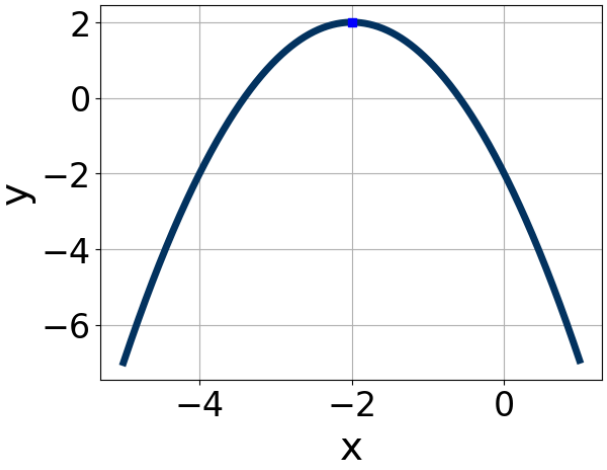
C. $a \in [-1.1, 1.9]$, $b \in [-23, -17]$, $c \in [-4, 2]$, and $d \in [15, 25]$

D. $a \in [17.6, 18.6]$, $b \in [-6, 1]$, $c \in [-4, 2]$, and $d \in [2, 4]$

E. None of the above.

---

2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b$, and $c$ belong to.




A. $a \in [-1.1, -0.7]$, $b \in [2, 5]$, and $c \in [-9, -3]$

B. $a \in [-1.1, -0.7]$, $b \in [-7, -1]$, and $c \in [-4, -1]$

C. $a \in [-1.1, -0.7]$, $b \in [2, 5]$, and $c \in [-4, -1]$

D. $a \in [0.2, 2.4]$, $b \in [2, 5]$, and $c \in [6, 9]$

E. $a \in [0.2, 2.4]$, $b \in [-7, -1]$, and $c \in [6, 9]$

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$24x^2 + 50x + 25$$

A. $a \in [5.98, 6.49]$, $b \in [4, 10]$, $c \in [3.95, 4.54]$, and $d \in [2, 9]$

B. $a \in [11.66, 13.4]$, $b \in [4, 10]$, $c \in [1.8, 2.43]$, and $d \in [2, 9]$

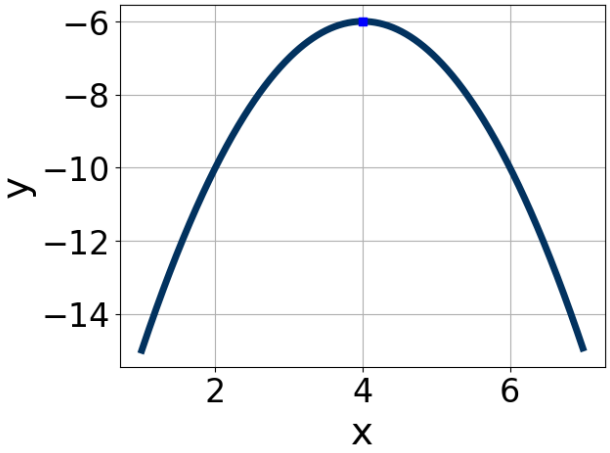
C. $a \in [-0.36, 1.49]$, $b \in [13, 21]$, $c \in [0.97, 1.26]$, and $d \in [23, 33]$

D. $a \in [1.25, 2.55]$, $b \in [4, 10]$, $c \in [11.85, 12.45]$, and $d \in [2, 9]$

E. None of the above.

---

4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b$, and $c$ belong to.




A. $a \in [-1.3, 0.5]$, $b \in [8, 9]$, and $c \in [-23, -18]$

B. $a \in [0, 1.1]$, $b \in [8, 9]$, and $c \in [8, 11]$

C. $a \in [0, 1.1]$, $b \in [-8, -5]$, and $c \in [8, 11]$

D. $a \in [-1.3, 0.5]$, $b \in [-8, -5]$, and $c \in [-23, -18]$

E. $a \in [-1.3, 0.5]$, $b \in [-8, -5]$, and $c \in [-12, -7]$

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-12x^2 - 10x + 4 = 0$$

A. $x_1 \in [-1.54, -0.67]$ and $x_2 \in [-0.7, 1]$

B. $x_1 \in [-0.59, -0.03]$ and $x_2 \in [0.8, 1.9]$

C. $x_1 \in [-18.17, -17.3]$ and $x_2 \in [16.4, 18.4]$

D. $x_1 \in [-4.18, -2.99]$ and $x_2 \in [12.8, 13.7]$

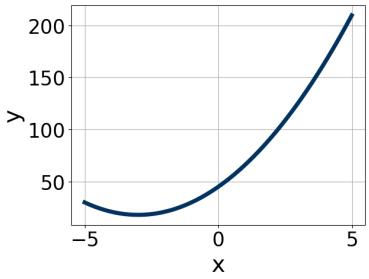
E. There are no Real solutions.

---

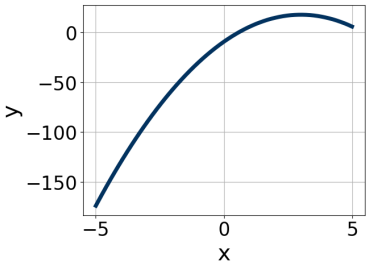
6. Graph the equation below.

$$f(x) = (x-3)^2 + 18$$

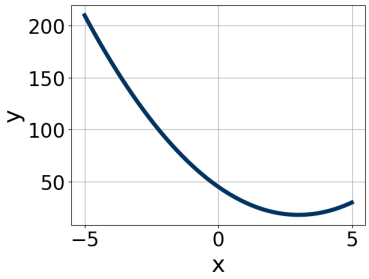
A.



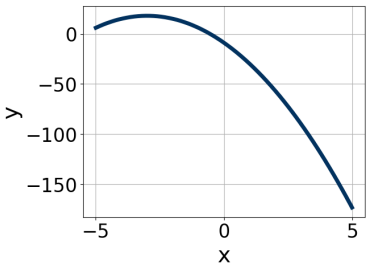

C.




B.




D.




E. None of the above.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-11x^2 + 7x + 9 = 0$$

A. $x_1 \in [-21.6, -20.4]$ and $x_2 \in [21.05, 22.11]$

B. $x_1 \in [-1.1, 1.9]$ and $x_2 \in [0.88, 2.39]$

C. $x_1 \in [-3.2, -0.8]$ and $x_2 \in [0.09, 0.99]$

D. $x_1 \in [-15.2, -12.3]$ and $x_2 \in [6.89, 7.07]$

E. There are no Real solutions.

---

8. Solve the quadratic equation below. Then, choose the intervals that the solutions $x_1$ and $x_2$ belong to, with $x_1 \leq x_2$.

$$25x^2 - 75x + 54 = 0$$

A. $x_1 \in [0.31, 0.39]$ and $x_2 \in [5.96, 7.79]$

B. $x_1 \in [29.95, 30]$ and $x_2 \in [42.83, 46.12]$

C. $x_1 \in [0.57, 0.64]$ and $x_2 \in [3.3, 3.81]$

D. $x_1 \in [1.16, 1.25]$ and $x_2 \in [0.89, 2.51]$

E. $x_1 \in [0.4, 0.46]$ and $x_2 \in [4.94, 5.77]$

---

9. Solve the quadratic equation below. Then, choose the intervals that the solutions $x_1$ and $x_2$ belong to, with $x_1 \leq x_2$.

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-3.83, -3.59]$ and $x_2 \in [-0.46, -0.32]$

B. $x_1 \in [-6.78, -5.74]$ and $x_2 \in [-0.37, -0.09]$

C. $x_1 \in [-30.58, -29.25]$ and $x_2 \in [-30.05, -29.91]$

D. $x_1 \in [-1.75, -0.99]$ and $x_2 \in [-1.23, -1.11]$

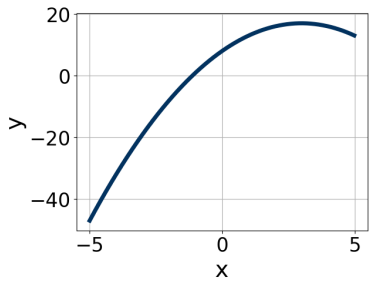
E. $x_1 \in [-2.56, -2.16]$ and $x_2 \in [-0.79, -0.53]$

---

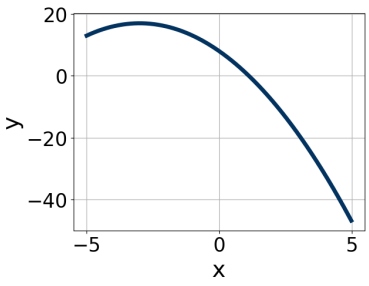
10. Graph the equation below.

$$f(x) = -(x - 3)^2 + 17$$

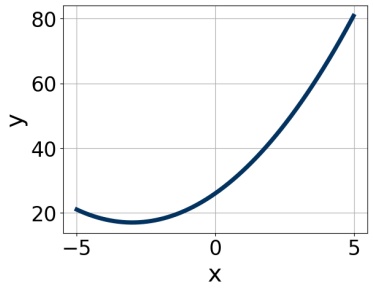
A.



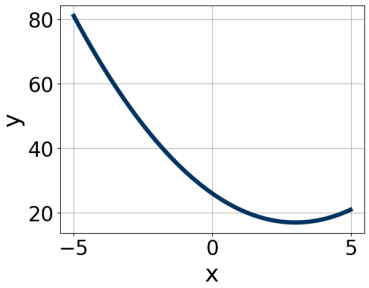

C.




B.




D.




E. None of the above.